



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,742	10/30/2003	Arie Jeffrey Den Boef	081468-0306518	6298
909	7590	03/24/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			MERLINO, AMANDA H	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2877	

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,742	DEN BOEF ET AL.	
	Examiner	Art Unit	
	Amanda H. Merlino	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 10-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/19/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

Claim 4 objected to because of the following informalities: on line 1 of claim 4, "a two-bar grating" should read "said two-bar grating" since it is referring to the same grating in claim 3. Appropriate correction is required.

Claim 19 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. As stated in MPEP 2113, product-by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. In the instant situation, claim 19 is not limited to the steps of claim 1; in that, the steps fail to structurally distinguish the product.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 and 16-21 rejected under 35 U.S.C. 102(e) as being anticipated by Miehler et al (2003/0048458).

Art Unit: 2877

With regards to claim 1-2, Miehner et al teaches of an inspection method comprising the steps of measuring aberration of a lithographic apparatus comprising the steps of forming a pattern on a surface of a substrate, measuring reflected spectra from the pattern and deriving from the reflected spectra, information indicative of at least one type of aberration of the lithographic apparatus (page 5, paragraph 044) wherein said pattern is sensitive to the at least one type of aberration.

With regards to claim 3-4 and 6, said pattern comprises a two-bar grating (page 13, paragraph 112; figure 14; page 13, paragraph 113) wherein the width of the bars are different.

With regards to claim 5, said information includes information indicative of comatic aberration (col 13: lines 1-2).

With regards to claim 7-9, the pattern comprising a hexagonal array of dots (page 10, paragraph 96) wherein said information includes information indicative of three-wave aberrations and includes differences in the relative diameters (line width) of the dots.

With reference to claim 16-18, measuring includes using a scatterometer wherein the incident angle is at normal to the substrate and at a plurality of angles (page 5, paragraph 44).

With regard to claim 19, examiner is interpreting "a device manufactured" as the substrate having a test structure corresponding to the test pattern. The only "device" that is being manufactured in the claim is the substrate with the test structure.

Furthermore, examiner notes that "a device" in claim 19 cannot be referring to the

Art Unit: 2877

lithographic apparatus in claim 1, since the method does not manufacture the lithographic apparatus, but only uses it in an inspection method.

With regard to claim 20, Mieher et al further teaches of providing the substrate with a photoresist, a material sensitive to irradiation, using a radiation beam to provide the beam and using the beam to transfer a pattern onto the photoresist (page 1; paragraph 2).

With reference to claim 21, measuring includes using a scatterometer (page 5, paragraph 44).

Reasons for Allowance

Claims 10-15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 10-15, the prior of record, taken alone or in combination, fails to disclose or render obvious an inspection method for deriving, from the reflection spectrum, information indicative of an amount of at least one type of aberration of the lithographic apparatus comprising the steps of forming, at a surface of the substrate, a test structure corresponding to the test pattern wherein the test pattern comprises first, second, and third structures having a common basis symmetric form, and wherein said first and second structure have equal but opposite asymmetric deviations from the common basis symmetric form, in combination with the rest of the limitations of claim the rest of the limitations of claim 10.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

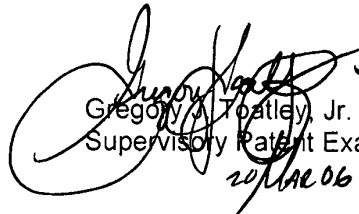
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda H Merlino whose telephone number is 571-272-2421. The examiner can normally be reached on Monday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J Toatley, Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amanda H Merlino *ahm*
Patent Examiner
Art Unit 2877
March 13, 2006


Gregory J Toatley, Jr.
Supervisory Patent Examiner
20 MAR 06